Cyclones and gales.—As usual in midsummer, there was little storminess in the extra-tropical regions. Two periods of the month, however, deserve comment:

About the 10th there was a marked fall of pressure near that portion of the 50th parallel of latitude from the Grand Banks to somewhat eastward of mid-ocean; and strong gradients were found near the chief steamship routes, although the actual center of low-pressure was, for several days, near Iceland or southern Greenland. Several steamships reported gales, mainly near the 50th parallel and on the 10th, 11th, or 12th.

On the 28th a considerable fall of pressure occurred over a small area not far to the eastward of Hatteras. The pressure changes on this day presumably were connected with the local downpour noted in waters east of South Carolina, which is described below. A well-marked center of comparatively small size advanced northeastward, increasing in strength, and for the 29th there are 5 gale reports for the waters just southeast of Nova Scotia, 2 of these estimating the force as whole gale (10). This LOW then turned in its course somewhat to northward, and quickly ceased to affect the main vessel lanes.

No tropical storm occurred in Atlantic waters during July. There were, however, 6 different reports of winds of force 6 to 8; all save 1 were encountered in the Caribbean Sea, and 4 of them occurred during the second week of July. The contrast between high pressure of the Azores region and low pressure near the equator was clearly the cause of these winds, which were of the nature of intensified trades.

Fog.—There was much more fog than normal during July. From the 45th meridian to the coasts of Europe, fog was considerably more prevalent than it had been during June. The area from 45° to 50° N. and 30° to 40° W. had fog on 14 days. There was less in the region nearer to the European coasts, where the highest incidence was in the square from 45° to 50° N., 10° to 15° W., which had a count of 10 days.

In the Gulf of St. Lawrence and close to Newfoundland less fog was encountered than during June; but over the Grand Banks and to the southwestward and westward to Cape Cod about as much as during June. The square from 40° to 45° N., 65° to 70° W., had 26 days of fog—every day from the 6th to 26th inclusive furnished at least one report. Southwest of Nantucket, fog was distinctly less common than it had been during June, and none has been reported anywhere south of the 35th parallel.

Downpour.—From the American steamer *Mariana*, Capt. C. Zeuthen, an interesting report about torrential rain encountered on a voyage from Philadelphia to Tampa has been received from the observer, Second Officer R. C. Spaulding:

> July 28, 1935, at 1:30 to 2:00 a. m., local mean time, in latitude 32°10′ N., longitude 79°20′ W., encountered a torrential downpour of rain, so heavy it reduced visibility to nothing. It fell straight down and spattered to a height of 3 or 4 feet off the deck. It was actually difficult to breathe standing out in it. The whistle when sounded made a gurgling sound, as if under water. The decks were filled to the "gunnels", water streaming everywhere. Lightning was observed, though barely visible through the murk; continuous loud thunder was heard. There was very little wind, mostly westerly. It was, no doubt, a "cloudburst."

NORTH PACIFIC OCEAN, JULY 1935

By WILLIS E. HURD

Atmospheric pressure.—Almost normal barometric conditions prevailed over the North Pacific Ocean during July 1935. Most of the eastern part of the ocean was dominated by the usual high-pressure area, within which few cyclonic disturbances occurred. The Aleutian LOW on the average lay over the northwestern part of the ocean and the Bering Sea. Pressure was low throughout Asiatic waters, with the center on the average off the southeast coast of China (mean at Hong Kong, 29.59 inches). The greatest departure from the monthly normal, as shown in table 1, was —0.06 inches, at Guam.

OCEAN GALES AND STORMS, JULY 1935

Vessel	Voyage		Position at time of lowest barometer		Gale began July—	Time of lowest barometer July—	Gale ended July—	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Direction and highest force of wind	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
NORTH ATLANTIC OCEAN			° ′	° ′				*Inches*					
Waukegan, Am. S. S.	Havre	New York	44 57 N.	41 12 W.	6	10p, 6	7	29.87	SW	SW, 8	W	SW, 8	SW-W.
Betterton, Am. S. S.	New York	Houston	35 38 N.	75 08 W.	8	6p, 8	9	29.68	SW	SW, 7	SW	SW, 8	SSW-SW.
Sanyo Maru, Jap. M. S.	Puerto Colombia.	New York	12 10 N.	75 20 W.	9	4a, 9	10	[1] 29.85	NNE	NNE, 7	ENE	ENE, 8	
New York, Ger. S. S.	Cherbourg	do	42 28 N.	51 40 W.	10	4p, 10	10	29.62	SW	W, 7	SW	SW, 9	SW-W-WNW.
Collamer, Am. S. S.	Havre	do	48 36 N.	29 04 W.	10	11p, 10	11	29.55	SW	SW, 8	SW	SW, 8	
Montreal City, Br. S. S.	Fowey	Philadelphia	50 40 N.	30 45 W.	11	5a, 11	11	29.48	SSW	SSW, 8	SW	SSW, 8	SSW-NW.
Laganbank, Br. M. S.	Algiers	Boston	38 36 N.	55 42 W.	10	8a, 11	11	29.98	SW	SW, 9	W	SW, 9	SW-WSW.
Mopan, Br. S. S.	Jamaica	Avonmouth	49 12 N.	23 05 W.	11	11a, 12	11	29.47	SSW	SSW, 6	SSW	SSW, 8	SW-SSW-WNW.
S. B. Hunt, Am. S. S.	Cartagena	Aruba	[2] 11 15 N.	75 08 W.	14	4p, 14	14	29.70	NE	NE, 7	NE	NE, 7	None.
Winona County, Am. S. S.	Dundee	Boston	[2] 57 59 N.	20 42 W.	14	10p, 14	14	29.72	SW	SW, 5	SW	SSW, 9	SW-W.
Fred W. Weller, Am. S. S.	Cartagena	Aruba	11 42 N.	74 00 W.	19	4a, 20	19	29.85	ENE	ENE, 4	ENE	ENE, 6	ENE-E.
New Brunswick, Br. S. S.	Dakar	Boston	38 26 N.	64 26 W.	26	9p, 26	27	29.95	SW	SW, 10	N	SW, 10	SW-NW-N.
Yselhaven, Du. S. S.	Antwerp	Norfolk	[2] 41 33 N.	61 49 W.	28	4p, 29	29	29.34	SE	WSW, 10	WSW	SE, 10	SE-WSW-W.
Maasdam, Du. S. S.	Rotterdam	New York	42 04 N.	61 17 W.	29	6p, 29	29	[1] 29.19	SSE	SSE, 9	SW	SSW, 10	SSE-SW.
Silvercypress, Br. M. S.	Gibraltar	Halifax	42 56 N.	59 50 W.	29	10p, 29	30	29.61	S	SSW, 9	SW	SSW, 9	S-SSW.
NORTH PACIFIC OCEAN													
City of San Diego, Am. M. S.	Fishing grounds	Manzanillo	18 40 N.	104 20 W.	1	5a, 1	1	29.82	SE	N, 2	SE	SSE, 8	N-E-SE.
Grays Harbor, Am. S. S.	Seattle	Yokohama	51 48 N.	170 45 W.	1	8a, 2	2	29.32	S	S, 8	S	SSE, 8	SSE-SSW.
Silverash, Br. M. S.	San Francisco	Manila	20 50 N.	142 30 E.	2	3a, 3	3	29.79	SSE	S, 8	SSE	S, 9	SSE-SSW.
Oregon, Am. S. S.	Manila	Los Angeles	44 14 N.	154 -- W.	10	10p, 11	11	29.70	N	NW, 5	N	N, 8	N-NW.
Silverbelle, Br. M. S.	do	do	[2] 39 14 N.	145 07 W.	11	4p, 11	12	29.82	SSW	S, 7	S	SSW, 9	S-SSW.
Oregon, Am. S. S.	do	do	36 06 N.	124 35 W.	17	6p, 18	18	29.91	NNE	N, 8	N	N, 9	None.
General Lee, Am. S. S.	Portland, Oreg.	Yokohama	51 40 N.	171 15 W.	22	4p, 22	22	29.56	SSW	SW, 8	WSW	SW, 9	SSW-SW.

[1] Barometer uncorrected.

[2] Position approximate.

TABLE 1.—*Averages, departures, and extremes of atmospheric pressure at sea level, North Pacific Ocean, July 1935, at selected stations.*

Station	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	Inches	*Inch*	*Inches*		*Inches*	
Point Barrow	29.88	−0.04	30.32	5	29.42	26
Dutch Harbor	29.95	+.01	30.56	31	29.44	17
St. Paul	29.86	+.02	30.30	31	29.50	2
Kodiak	29.98	+.04	30.20	25	29.50	20
Juneau	30.07	+.02	30.27	17	29.81	1
Tatoosh Island	30.07	+.02	30.27	28	29.85	22
San Francisco	29.94	−.01	30.09	8	29.72	1
Mazatlan	29.87	+.01	29.98	30	29.80	28
Honolulu	30.00	−.02	30.06	21	29.92	26
Midway Island	30.11	.00	30.22	9	30.00	7
Guam	29.78	−.06	29.88	15	29.52	24
Manila	29.71	−.03	29.82	1, 15	29.58	21
Hong Kong	29.59	----------	29.76	2, 11	29.23	30
Naha	29.71	−.01	29.81	1	29.40	27
Chichishima	29.89	+.04	30.00	14	29.72	7
Nemuro [1]	----------	----------	30.00	10	29.58	29

[1] Based on data for 19 days only.

NOTE.—Data based on 1 daily observation only, except those for Juneau, Tatoosh Island, San Francisco, and Honolulu, which are based on 2 observations. Departure are computed from best available normals related to time of observation.

Cyclones and gales of the temperate zone.—The deepest extra-tropical cyclone of July occurred over extreme northwestern waters early in the month. At Attu Island, in the extreme western Aleutians, barometer readings as low as 29.08 inches, on the 1st, and 29.06, on the 2d, were recorded. The cyclone affected most of the Bering Sea and adjacent Pacific from the 1st to 3d, thereafter gradually retreating northwestward and filling in. The only gales of record in connection with the disturbance were of force 8 from south-southeast near 52° N., 171° W., on the night of the 1st–2d. A gale in the same vicinity on the 22d attained force 9.

From the 10th to 12th a depression of moderate energy lay about midway between the Hawaiian Islands and Alaska, and caused local gales of force 8 in the neighborhood of 44° N., 154–155° W., on the 10th and 11th, and of force 9, near 39° N., 145° W., early on the 12th.

The weather off the central California coast was disturbed by moderate to fresh local northerly gales on the 1st, and by moderate to strong local northerly gales on the 17th and 18th.

Tropical disturbances.—During July 1 disturbed conditions prevailed off the Mexican coast between Acapulco and Manzanillo. The American motorship *City of San Diego* received a radio report that a cyclone was moving up the coast, and made port at Manzanillo, arriving at noon in a southeasterly gale of force 8. The American steamship *Missourian* reported a wind of force 7 in the vicinity earlier in the day. No further development of the disturbance has been indicated.

In the Far East a similarly disturbed and apparently undeveloped condition prevailed during a part of the 2d and 3d in the neighborhood of 21° N., 142–143° E., where the British motorship *Silverash* encountered fresh to strong southerly gales, with slightly depressed barometer.

In connection with the subjoined Manila report, furnished by the Rev. Bernard F. Doucette of the Manila Observatory, the following additional items are presented relative to the two typhoons described:

During the passage of the typhoon of the 15th–23d, a pressure reading of 29.16 inches was reported at Ishigakijima Island on the 20th, and a northwest gale of force 8 occurred in the Luzon Strait on the 19th.

While the typhoon of July 22–31 lay east of Taiwan (Formosa) on the 28th, a report from Ishigakijima Island gave a barometer of 28.98 and a northwest gale of force 8. About 100 vessels took refuge in Kelung harbor on the 29th. The storm passed over Taiwan late on that date, temporarily isolating the island on account of extensive damage to communications lines.

Fog.—Fog was the most important meteorological element affecting travel along the northern routes. To the northward of the 40th parallel, it was reported on from 3 to 15 or more days within the several 5° squares, with a general increase westward from the Washington and Oregon coasts to the region of maximum formation between the 180th meridian and 150° E. A number of ships made specific comments upon the extent to which it was observed.

The British motorship *Silverguava* reported 86 hours of continuous fog, from 4 p. m., of the 4th, in 43°43′ N., 140°00′ W., until 6 a. m. of the 8th, in 46°48′ N., 168°10′ W.

The American motorship *Ward* reported mostly thick fog, with only short periods of clearing, from 5 a. m., July 17, in 40°23′ N., 159°16′ E., until 10 p. m., July 23, in 44°13′ N., 150°00′ W.

The American steamship *President Jefferson* had 88 hours of practically continuous dense fog banks from the 180th meridian westward, July 13 to 16.

There were 11 days with fog along the California coast, and 5 days with fog along the coast of Lower California.

The New York Maritime Register reported the sinking of the Japanese steamship *Midori Maru*, with the loss of 104 lives, due to a collision with another steamer in fog southwest of Kobe on July 3.

TYPHOONS AND DEPRESSIONS OVER THE FAR EAST, JULY 1935

By BERNARD F. DOUCETTE, S. J.

[Weather Bureau, Manila, P. I.]

Two typhoons and two depressions form the total of the disturbances which affected the weather of the lower latitudes in the Far East during July 1935. Of these, the typhoon of July 22 to 31 was the most important. Details of each of these storms follow.

Depression, July 12 to 16.—Forming about 200 miles ENE. of San Bernardino Strait, this depression moved WNW., gradually inclining to the NW. and crossing northern Luzon. Changing to a westerly course as it entered the China Sea, it continued along this course to Indo China. This depression was of little importance. The positions, day by day, of the depression are given below:

	Latitude N. °	′	*Longitude E.* °	′
July 12, 2 p. m.	14	40	127	40
July 13, 6 a. m.	15	30	123	30
July 14, 6 a. m.	18		116	
July 15, 6 a. m.	19		109	30

Typhoon, July 15 to 23.—Appearing between Yap and Palau, a depression moved NW. to a position about 150 miles east of central Luzon, where it intensified as it changed to a northern course. When about 120 miles east of Basco, Batanes Islands, it shifted for a short time to the NE., then N. again, to a position close to the Sakishima Group. There, it inclined to the NW. and proceeded to the China coast, filling up within 24 hours